## WHAT IS CLAIMED ARE:

A semiconductor device, comprising:

a semiconductor substrate;

a gate insulation film formed on one major surface of said semiconductor substrate and containing titanium oxide as a primary constituent material; and a gate electrode film formed in contact with said gate insulation film and containing ruthenium oxide or alternatively iridium oxide as a primary constituent material.

- A semiconductor device according to claim 1, 2. wherein film thickness of said gate insulation film and said gate electrode film is greater 1 Wasines! than 0.9 nm/inclusive
- A semiconductor device according to claim 1, З. wherein said titanium oxide is in the form of a crystal of rutile structure.
- A semiconductor\device, comprising: a semiconductor substrate;

a gate insulation film formed on one major surface of said semiconductor\substrate and containing titanium oxide as a primary constituent material; and

a gate electrode film\formed in contact with said gate insulation film,

wherein said gate electrode film is constituted by a laminated film which is composed of an electrically conductive oxide film containing ruthenium oxide or alternatively iridium oxide as a primary

constituent material and an electrically conductive film containing a metal as a primary constituent material.

- 5. A semiconductor device according to claim 4, wherein film thickness of said gate insulation film and said electrically conductive oxide film is greater than 0.9 nm inclusive.
- 6. A semiconductor device according to claim 4, wherein said titanium oxide is in the form of a crystal of rutile structure.
- 7. A semiconductor device according to claim 5, wherein said metal is ruthenium or alternatively iridium.
- 8. A semiconductor device, comprising:
  - a semiconductor substrate;
  - a gate insulation film formed on one major surface of said semiconductor substrate and containing titanium oxide as a primary constituent material;
  - a gate electrode film formed in contact with said gate insulation film and constituted by a laminated film which is composed of an electrically conductive oxide film containing ruthenium oxide or alternatively iridium oxide as a primary constituent material and an electrically conductive film containing a metal as a primary constituent material;
  - a first capacitor electrode formed on the one major surface of said semiconductor substrate;
    - a capacitor insulation film formed in contact

with said first capacitor electrode and exhibiting a high dielectric constant or alternatively ferroelectricity; and

a second capacitor electrode formed in contact with said capacitor insulation film.

- 9. A semiconductor device according to claim 8, wherein film thickness of said insulation film and said electrically conductive oxide film is greater than 0.9 nm inclusive.
- 10. A semiconductor device according to claim 8, wherein said titanium oxide is in the form of a crystal of rutile structure.
- 11. A semiconductor device according to claim 8, wherein said metal is ruthenium or alternatively iridium.
- A semiconductor device, comprising:

  a semiconductor substrate;

a gate insulation film composed of a first gate insulation film formed on one major surface of said semiconductor substrate and containing titanium oxide and titanium silicate as primary constituent materials and a second gate insulation film formed on said one major surface and containing titanium oxide as a primary constituent material; and

a gate electrode film formed in contact with said gate insulation film and containing ruthenium oxide or alternatively iridium oxide as a primary constituent material.

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A semiconductor device, comprising:

a semiconductor substrate;

a gate insulation film composed of a first gate insulation film formed on one major surface of said semiconductor substrate and containing titanium oxide and titanium silicate as primary constituent materials and a second gate insulation film formed on said one major surface and containing titanium oxide as a primary constituent material; and

a gate electrode composed of a first gate electrode film formed in contact with said gate insulation film and containing ruthenium oxide or alternatively iridium oxide as a primary constituent material and a second gate electrode film formed in contact with said gate insulation film and containing one selected from a group consisting of ruthenium, iridium, platinum, tungsten and molybdenum as a primary constituent material.

14. A method of manufacturing a semiconductor device, comprising the steps of:

forming a gate insulation film containing titanium oxide as a primary constituent material on one major surface of a semiconductor substrate; and

depositing on said gate insulation film a conductor film containing ruthenium or alternatively iridium as a primary constituent material to thereby form a gate electrode film.

15. A method of manufacturing a semiconductor

device, comprising the steps of:

forming a gate insulation film containing titanium oxide as a primary constituent material on one major surface of a semiconductor substrate;

depositing on said gate insulation film a conductor film containing ruthenium or alternatively iridium as a primary constituent material to thereby form a gate electrode film;

forming a first capacitor electrode;

forming a capacitor insulation film having high dielectric constant or ferroelectricity in contact with said silicon first capacitor electrode; and

forming a second capacitor electrode in contact with said capacitor insulation film.